

# HP Indigo Spot Master

## Industry's fastest time-to-color



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# We are spending more time on color than ever

**Brands**  
**Global companies**



Shorter product lifespan



More and more versioning



Run length

**PSP's**



increasing # jobs and applications per shift



Shorter Runs.  
Tight turnaround time



Deliver higher quality

**Impact on color?**



**More** color matching per day



**Faster.** Less time for color matching



**Better** Higher accuracy



# Mindset change ..

Constant  
baseline state



Dynamic  
production  
environment



# Paradigm shift in workflow concept operation

## Today

Press Calibration

Recipe, CMYK/OGV  
values

Manual matching

ReRip per color adjust

One set of Separations  
For spots and image

Manual color validation,  
long approval cycle



## HP Indigo Spot Master

Dedicated Job  
Calibration

L.a.b values

Automatic matching

No ReRip

dedicated separations  
for spot colors

Automatic color validation,  
on the fly color approval

# How does Indigo Spot Master work?



## Reach it      Keep it      Report it

Get spot LAB values from the file or package

1



Location based, Spot color refinement per job

2



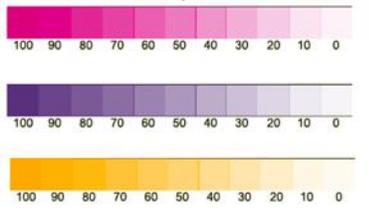
On press approval DFE automatic update

3

Spot Name	$\Delta E$	Approved
Spot 1	0.5	<input checked="" type="checkbox"/>
Spot 2	3.0	<input checked="" type="checkbox"/>
Spot 3	0.5	<input type="checkbox"/>

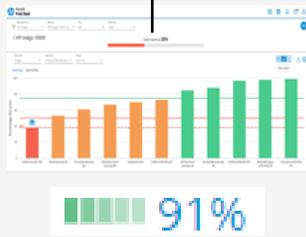
Continuous calibration of spot and process colors

4



Real time color scorecard

5



# Spot Master

From DFE to Press and back to DFE



Press update Color Engine  
LAB + Recipe -> Color Strategy



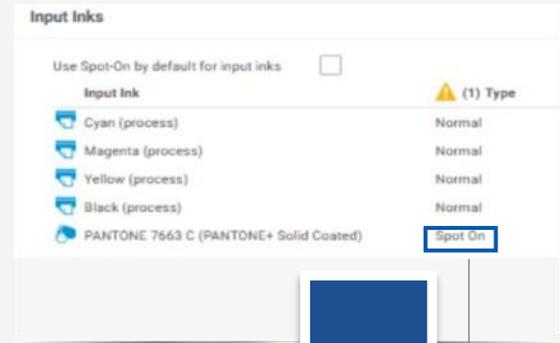
Approve

Check the proof and approve the spot colors

Spot Name	$\Delta E$	Approved
PANTONE 7686C	-1.0	<input checked="" type="checkbox"/>

Approve all spot colors

Press:  
Print and Approve



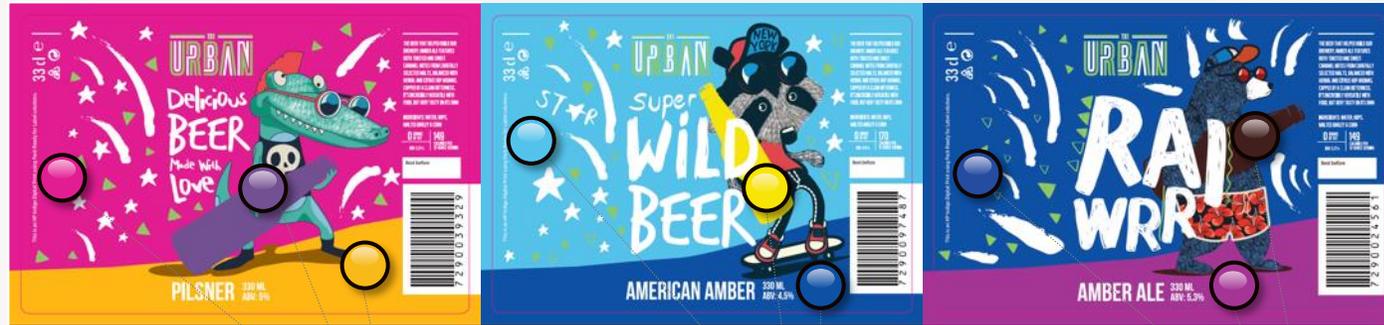
Press Wizard:  
Spot Emulate



# Location based, Spot color refinement

Making sure every package looks exactly the same

Original job



Spot colors



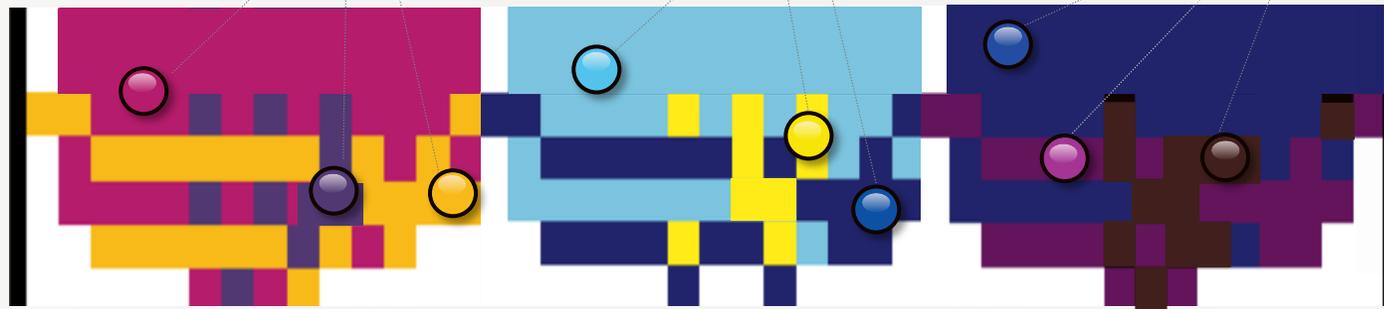
Spot colors



Spot colors



Spot calibration job

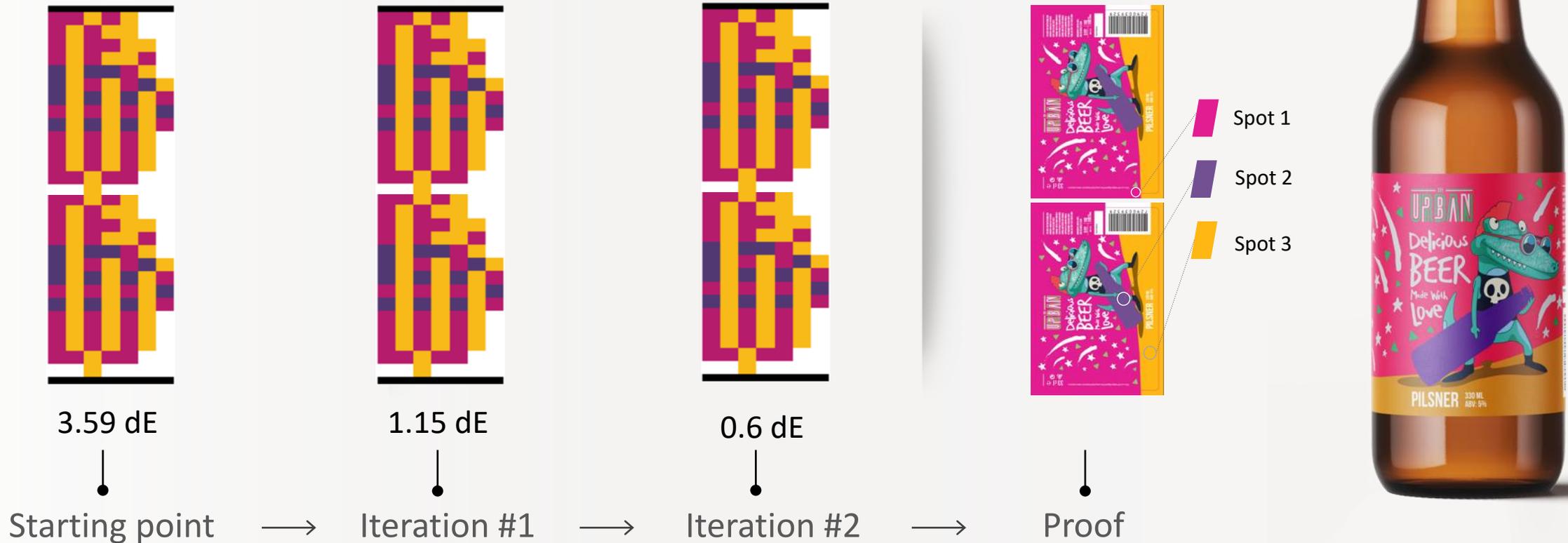


Record speed inline spot refinement



# Spot Master color refinement

Less than 3 minutes, less than 3-meter waste, less than 1E\*

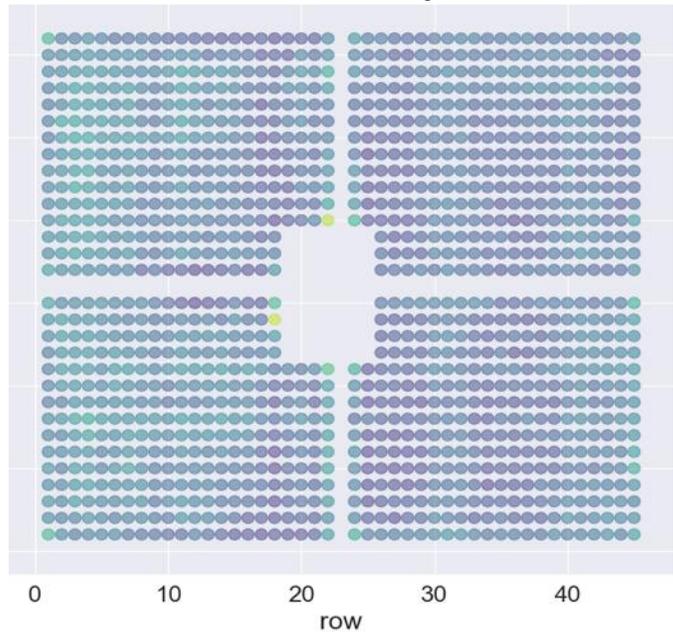
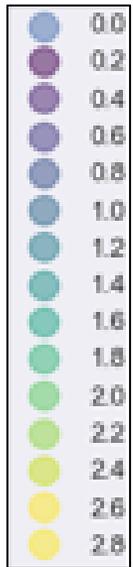


# Location based, Spot color refinement algorithm



In less than 2 minutes , and after 2 iterations, the AVG accuracy is  $\sim 0.6$ dE

High uniformity  
Heat Map



dE to  
Page Mean

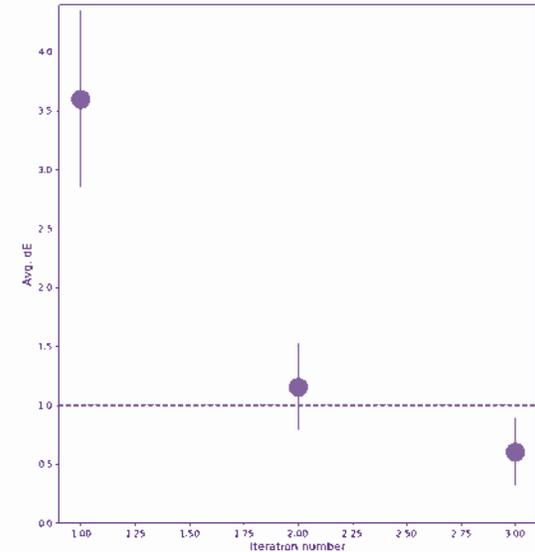
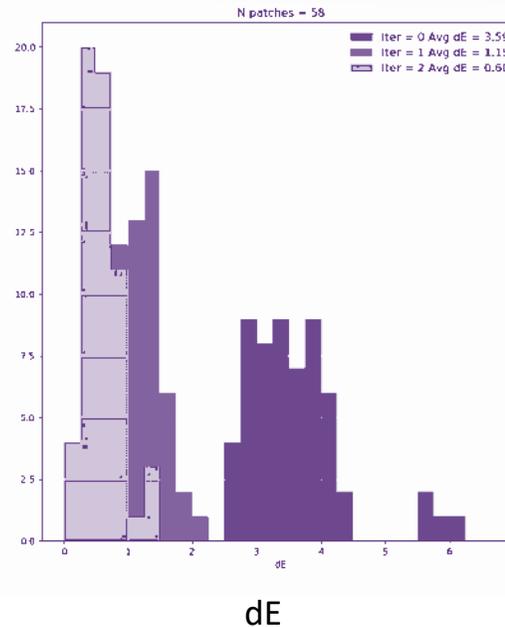
Starting point  
3.59 dE



Iteration #1  
1.15 dE



Iteration #2  
0.6 dE

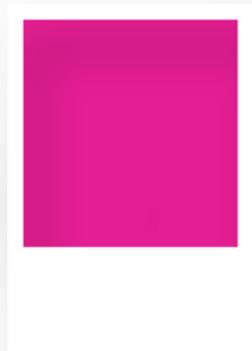


# of iterations

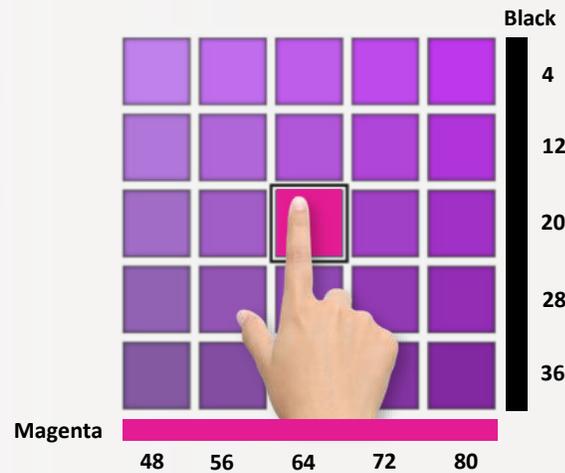
# Alternative refinement: Spot Master Visual match

Less than 3 minutes, less than 3-meter waste, less than 1E\*

Original Spot



Visual match chart

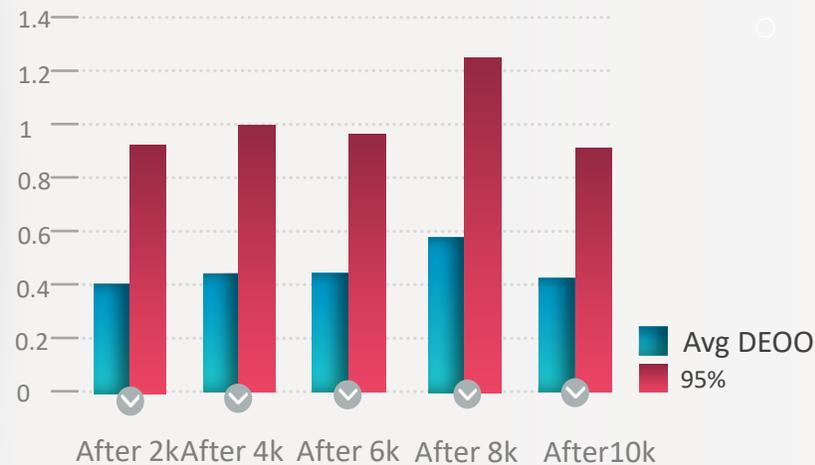
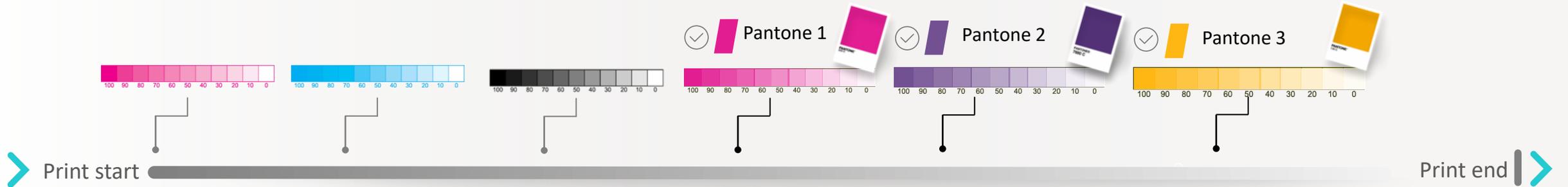


instant visual adjust no reRIP needed.  
Selected L.A.B values are updated in the CE color strategy



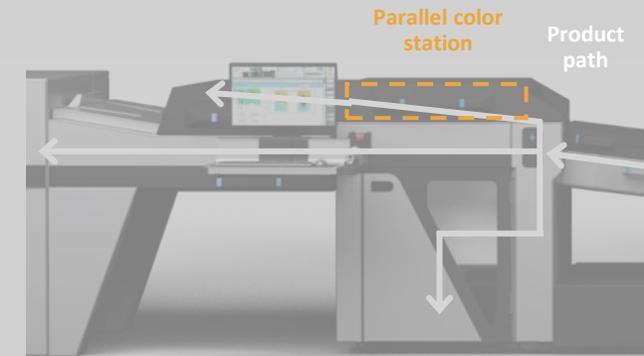
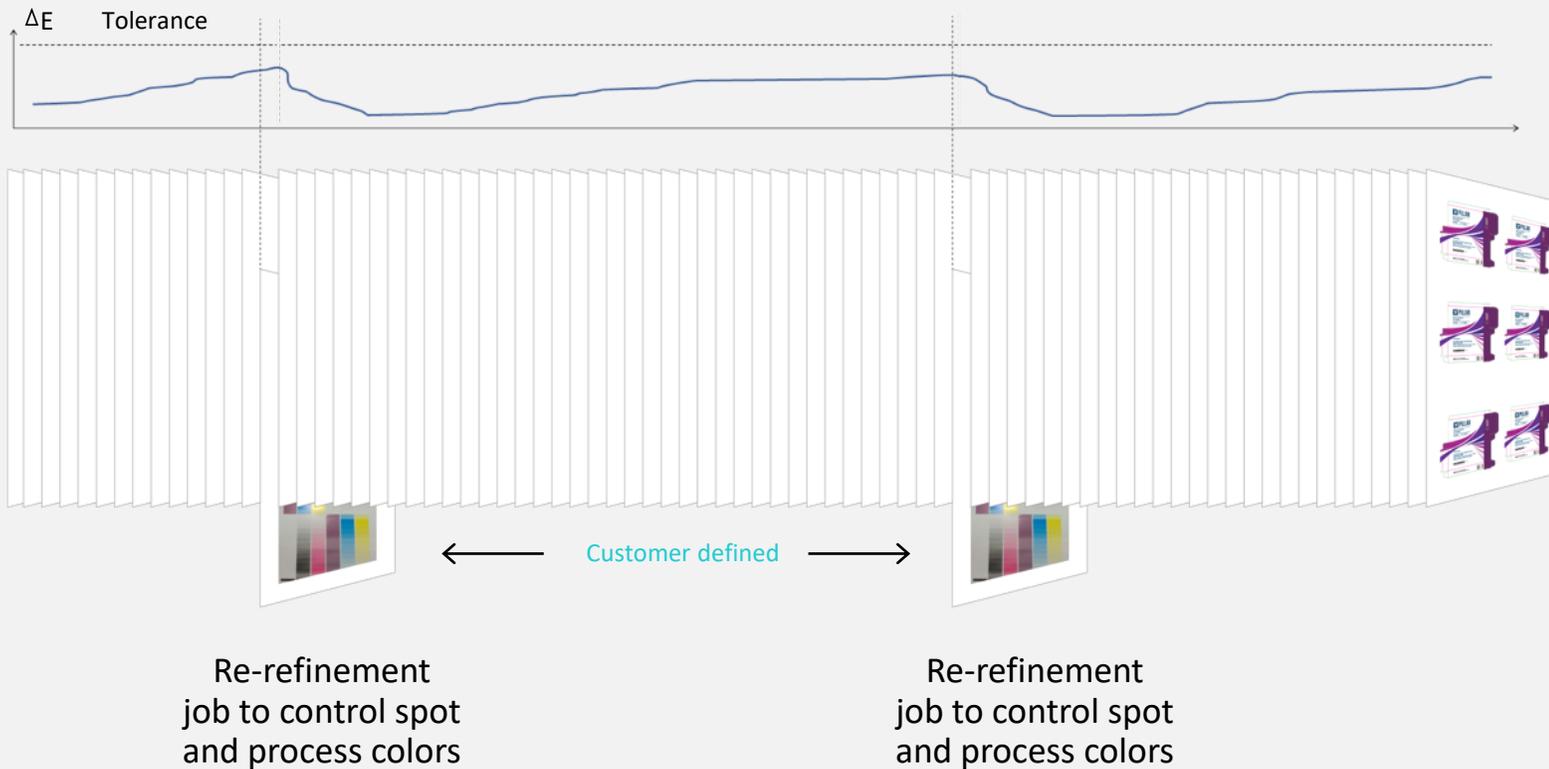
# Ensure that every package looks the same from first page to the last

Continuous Spot and process Color Calibration (CCC) for color consistency



On-the-fly monitoring with automatic adjustments to maintain **spot color consistency**, solids and grayscales consistency along the run

# Process and Spot colors full page Continues Color Calibration, maintaining match on all boxes



Jobs analyzed in parallel color Station w.o. disruption to production

# Spot Master will let the operator know he is keep printing with right colors



On press spot accuracy report

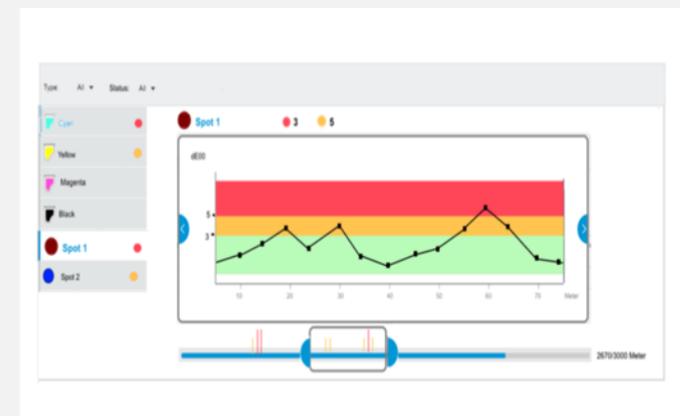
Approve

Check the proof and approve the spot colors

Spot Name	$\Delta E$	Approved
 PANTONE 7686C	-1.0	<input checked="" type="checkbox"/>

Approve all spot colors

Continues color calibration reports



# PrintOS Brand Beat

Share your superior color results with Brands and customers.

Impress Brands with real time **JOB COLOR SCORECARD** and win high value labels

- Brand Beat enables converters to share and analyze job color quality and consistency from real time and inline production data
- Allows convertors to leverage color reports to derive color excellence and improve overall color quality and consistency.
- Provides real time insight of opportunities to color correct.

COMING SOON



Print Beat

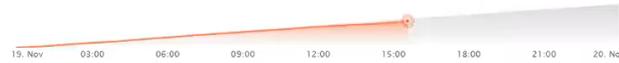


Daily

Devices (2)  
HP Indigo 10000...

Shift mode

Today info: 41,671 / 68,744 SRA3 normalized imp



Nov 19, 2019 3:58 PM   

Today Last 7 Days

**HP Indigo 35K** 16,511 / 25,932  
3 Minutes PRINTING imp (64%)

Current printing job: Flowers calendar brochure\_001

4,101	1,336	328
Sheets printed	imp / hr	Sheets / hr

10	79	1
In queue (0h 30m)	Maintenance tasks	Advice

116	92%	92%
Printed jobs	Spot Master	Color Beat (06:00)

**HP Indigo 25K** 7,059 / 11,888  
4 Minutes PRINTING imp (59%)

Current printing job: Flowers calendar brochure\_001

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Sheets printed	imp / hr	Sheets / hr

10	79	1
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# Spot Master

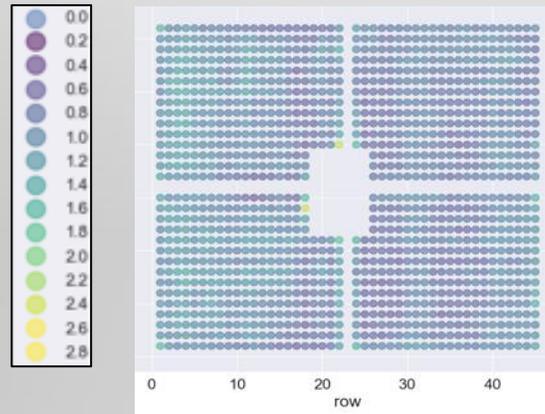
Boost print time, color consistency, with more automation and less waste



3 minutes  
to spot

**A new patented algorithm** delivers the industry's fastest time-to-color in conjunction with Esko color engine

Heat map



High spot color consistency  
within the frame

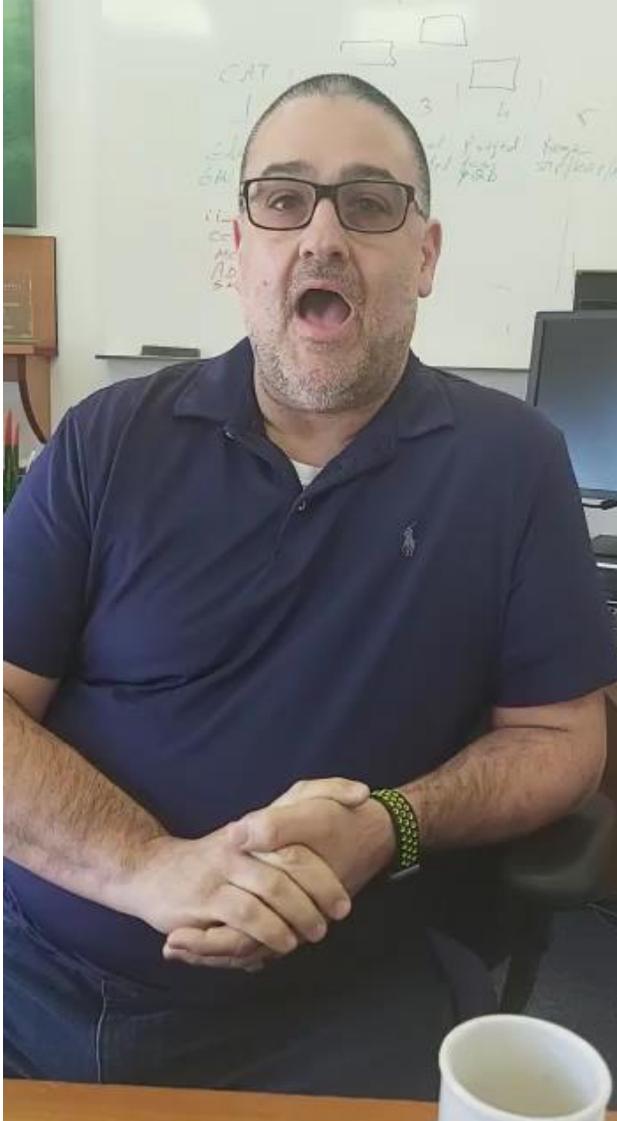
**Location depended spot refinement** process. Making sure every package looks exactly the same



Increasing spot consistency  
from first label to the last

**Inline spot calibration** using **Continuous Color Calibration (CCC)** on spot and process colors

# What do you think about HP Indigo Spot Master?



# Spot Master – FAQ

1. How many inks (#of colors) will be used for spot color matching? Will OVG inks be a must ?  
Spot master will use the ink set that is defined at the color strategy by the color engine, Spot Master will not add or exclude colors
2. Will spot master extend the color gamut, for example will we be able to reach spot color which is currently out of the CMYC gamut.  
No Spot Master will not extend the color gamut
3. Will Spot Master support reverse printing ? With and without white ink?  
Based on initial testing we do believe that we will be able to support reverse printing with and without white ink. We are planning compensate on the films transparency by smart algorithm. Please note that this functionality will not be available on day one.

# Spot Master – FAQ

4. How many spot colors can Spot Master support in parallel ?in one job.  
Up to 9 spot colors per job, please note that typical flexible packing job consists of 2-4 spots colors
5. So typical job with 3 spot colors will have 9 iterations, 9 meters and will take 9 minutes ?  
OK lets answer it one by one,
  4. The numbers of spot colors doesn't impact the number of iterations, in most cases the algorithm will use 3 iterations, even for 9 spot colors
  5. The number of spot colors doesn't impact the number of meters, each iteration uses ~ 1 meter according to the job repeat length
  6. Regarding the time , there is no formula for accurate calculation, it is related to the job length and to the location of the spots color in the Job. The average time is 5 minutes, we saw cases of 7 and even 9 minutes

# Spot Master – FAQ

6. Will Spot Master solve LE/TE color variation?

Spot Master will solve part of LE/TE color variation, due to the location depended spot refinement

7. What about graphics areas like images or text will they be fixed by SM with the process colors ?

Spot Master will not impact the process colors, it is relent for spot colors only

8. Is the external spectrometer (Xrite Exakt) included in the Value Pack (as shown in the presentation movie for SPOT master when the matched 3 colors) and is there still use for the external IO table?

The external spectrometer is not included in the Vale Pack. The external iO can still be used for profile making and for general external measurement e.g. if need to measure a chart to verify compliance for a given standard

9. Will customers have to pay additional clicks for the “virtual separations” ?

No customer will not have to pay additional clicks for the “virtual separations”, therefore we named it virtual